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Family Name						
Given Names						
Student Number						
Teaching Period	Semester 1, 2017					

FINAL EXAMINATION	DURATION
PHA210 – Pharmacology 1	
	Reading Time: 10 minutes
	Writing Time: 180 minutes

INSTRUCTIONS TO CANDIDATES

This examination has 2 (A and B) Sections:

Section A contains Forty (40) Multiple Choice Questions. Answer all questions on the Faculty/School supplied Multiple Choice Answer Sheet. Total marks allocated: Twenty (20).

Suggested time allocation: One (1) hour.

Section B contains Ten (10) Extended-Answer Questions. Answer any Eight (8) questions only in the 20-page Booklet provided. Total marks allocated: Eighty (80).

Suggested time allocation: Two (2) hours.

EXAM CONDITIONS

You may begin writing from the commencement of the examination session. The reading time indicated above is provided as a guide only.

This is a CLOSED BOOK examination

No calculators are permitted

No handwritten notes are permitted

No dictionaries are permitted

ADDITIONAL AUTHORISED MATERIALS	EXAMINATION MATERIALS TO BE SUPPLIED
No additional printed material is permitted	1 x 20 Page Book 1 x Scrap Paper Faculty/School Multiple Choice Answer Sheet

**THIS EXAMINATION IS PRINTED
DOUBLE-SIDED.**

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Section B

Extended-Answer Questions

Total No. of Marks for this Section: 80

Please answer this section in the 20-page Answer Booklet provided. Ensure that your name and student number have been written on the front page of the answer booklet.

Answer any EIGHT (8) questions.

Marks for each question are indicated. Suggested time allocation: 120 mins

Question 1

Mr SM has been diagnosed with coronary heart disease and is currently taking the following therapeutic agent:



- Describe the mechanism of action of the active ingredient in Isomonit® and explain how it benefits Mr SM? (6 marks)
- Comment on the differences in the pharmacokinetics and clinical uses of orally administered Isomonit® and sublingually administered glyceryl trinitrate.

(4 marks)

Question 2

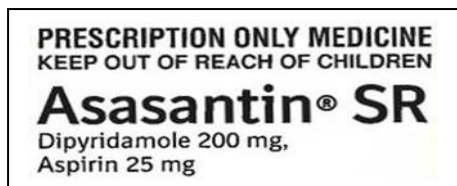
Mr SM (from **Question 1**) is also taking the following therapeutic agents:



- What co-morbidity (additional disorder) is Mr SM likely to be suffering from? (1 mark)
- Describe the mechanisms of action of the active ingredients in Vytorin®. (6 marks)
- What are the consequences if Mr SM is not compliant with taking this medication? (3 marks)

Question 3

Mr SM (from **Question 1** and **2**) is also taking the following therapeutic agents:



- a. Describe the mechanisms of action of the active ingredients in Asasantin®.
(7 marks)
- b. What are the consequences if Mr SM is not compliant with taking this medication?
(3 marks)

Question 4

Ms PK has been treated with the following:



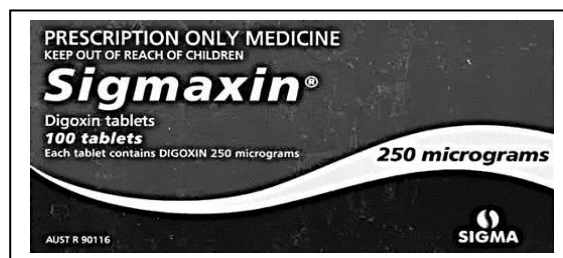
- a. What disorder is Ms PK likely to be suffering from?
(1 mark)
- b. Describe the mechanisms of action of the active ingredients in COVERSYL PLUS® and explain how they resolve Ms PK's disorder.
(7 marks)
- c. Explain the advantages of using this preparation in comparison to COVERSYL®, which contains only perindopril arginine.
(2 marks)

Question 5 (multiple topics)

- a. What is meant by the term 'pH-dependence' with respect to local anaesthetics?
(5 marks)
- b. Triple therapy (omeprazole, amoxicillin and clarithromycin) is often required for the treatment of peptic ulcers. Describe the mechanism of action of omeprazole and explain when this therapy is necessary.
(5 marks)

Question 6

Mr TP is admitted to the hospital with fatigue, breathlessness and signs of fluid retention resulting in oedema. Medical examinations reveal a cardiomegaly (enlarged heart) and reduced ventricular function in the absence of other possible causes. He is treated with the following agent and his signs and symptoms improve subsequently.



- a. What disorder is Mr TP likely to be suffering from?
(1 mark)
- b. Describe the mechanism of action of the active ingredient in Sigmamaxin[®] and explain how it improves Mr TP's signs and symptoms related to his disorder.
(6 marks)
- c. What kind of adjustment you would make if a loop diuretic was co-administered to relieve Mr TP's oedema? Explain your answer.
(3 marks)

Question 7

Describe the mechanism(s) of action and discuss how each of these drugs is useful in treating hypertension.

- a. Bisoprolol
- b. Candesartan
- c. Clonidine
- d. Lercanidipine
- e. Labetalol

(2 marks each)

Question 8

Mrs RS is currently taking the following therapeutic agent:



- a. What disorder is Mrs RS likely to be suffering from? (1 mark)
- b. Describe the mechanism(s) of action of the active ingredient in Cordarone X[®] and explain how it benefits Mrs RS. (6 marks)
- c. A loading dose of this agent is needed when commencing the treatment. Explain what is meant by “loading dose” and the reason for this requirement. (3 marks)

Question 9 (multiple topics)

Describe the mechanism(s) of action and the uses of the following drugs in eye drops. Include in your answers, specify their effects on the pupil size and vision.

- a. Phenylephrine
- b. Tropicamide
- c. Pilocarpine
- d. Timolol

(2.5 marks each)

Question 10

- a. Describe the mechanism of action of heparin and comment on the differences in pharmacology between unfractionated and low molecular weight heparin (LMWH).

(4 marks)

- b. Describe the mechanism of action of warfarin and explain why there is a requirement for heparin co-administration when commencing warfarin therapy.

(6 marks)

End of Sections B

End of Exam Paper